COLLADA Computing for Geophysical Applications, Phase I

Completed Technology Project (2011 - 2011)

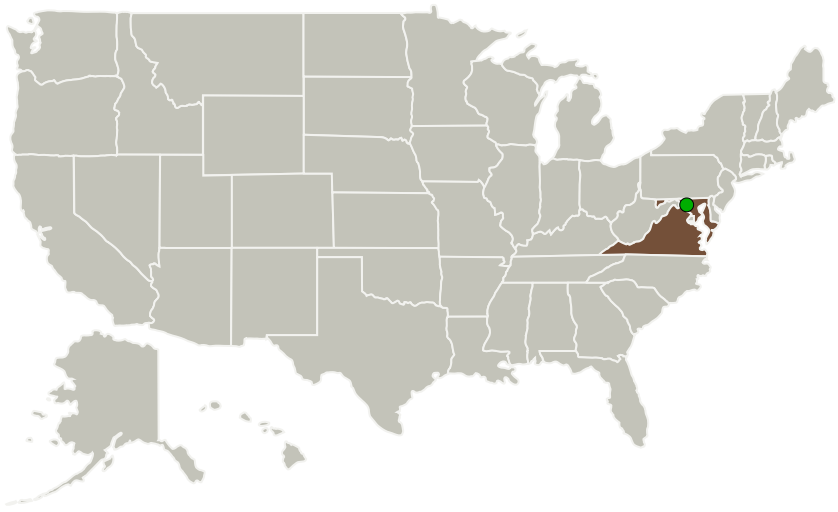
Project Introduction

The COLLADA

TM

open industry XML standard for 3D Graphics Exchange is applied for representation, combination and analysis of geophysical information from disparate sources in 4-Dimensions. COLLADA Computing provides a common linear framework for representing and associating COLLADA spatial-temporal objects from the atmospheric, oceanic, space and geologic domains. Once translated into COLLADA objects, disparate data can be combined and utilized to create cross-domain products regardless of the original coordinate system or data geometry, and can be viewed with any Virtual Globe that supports the COLLADA industry standard. COLLADA Computing algorithms will be developed in the JAVA language to support mathematical and topological operations on these COLLADA spatial objects on multiple compute platforms and operating systems. Linear approximations are applied within spatial tolerance limits for geometric position to enhance compute edfficiency. Using primarily the Affine Transformation, COLLADA Computing on extracts of very large datasets may be sufficient to create many derived products for initial review and analysis. The Phase 1 COLLADA Computing prototype will be demonstrated using Google Earth. Compatibility is also anticipated with the NASA World Wind JAVA SDK when an open source COLLADA geometry engine is added to that capability.

Primary U.S. Work Locations and Key Partners



COLLADA Computing for Geophysical Applications, Phase I

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Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
WxAnalyst, LTD	Lead Organization	Industry Small Disadvantaged Business (SDB)	Fairfax, Virginia
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	Virginia

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138043)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

WxAnalyst, LTD

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

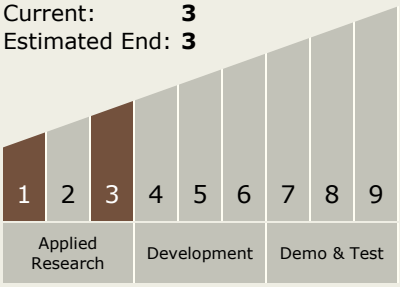
Carlos Torrez

Principal Investigator:

Scott D Shipley

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.4 Information Processing
    - TX11.4.2 Intelligent Data Understanding

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System